

REMARKS

The Examiner has rejected claims 1-7 and 10-11 under Section 102(b) as anticipated by or, in the alternative, under Section 103(a) as obvious over Reinalda et al. in view of Khare et al. The Examiner's reason for this rejection is that Reinalda teach a process for the preparation of a zirconia-based catalyst which uses particulate zirconia. Khare are said to teach a process for making shaped zirconia particles. Claim 6 is rejected under 103(a) as being unpatentable over the same two references for basically the same reasons. Claims 1-7 and 10-11 are rejected under Section 103(a) as being unpatentable over Khare in view of Reinalda. The Examiner's position is that Khare teach a similar process which fails to teach cobalt in the form of a hydroxide, etc. whereas Reinalda teaches cobalt in such a form. The Examiner's rejections are respectfully traversed.

All of the claims now under examination require that the particulate zirconia comprise no more than about 15 percent by weight of zirconia which is other than monoclinic zirconia. Neither Reinalda nor Khare contain any reference to monoclinic zirconia. Therefore, neither reference can anticipate the claims of this application.

At two different points in the rejection, the Examiner makes the statement that as to the limitation of the particulate zirconia comprising no more than about 15 percent by weight of zirconia that is other than monoclinic zirconia, the combined teachings of the references teach a substantially similar process as that of the claimed invention such that the properties of the product produced by said process would be substantially similar to that of the claimed invention. The Examiner's statement is incorrect because the properties of the product produced according to the claims of the present invention are much different than and better than the properties of the product produced by the combined teachings of the prior art.

A review of the results of Examples 1 through 6 shown in Table 1 on page 24 of the present application shows the advantages of practicing according to the claims of the present invention rather than practicing outside the scope of the present invention. Example 1 utilized 92 percent monoclinic zirconia in the starting powder and produced an extruded product with a radial crush strength which was almost twice and more than twice the crush strength produced according to Example 2 wherein the starting powder contained 74 percent by weight of monoclinic zirconia. In Examples 3-6, wherein the amount of monoclinic zirconia in the starting powder was decreased, the radial crush strength dramatically decreases. Thus, it is clear that the data presented in the examples show that operating according to the claims of the present invention results in the production of a superior extrudate than is achieved when practicing according to the prior art cited by the Examiner, i.e., which contain no specification that any amount of monoclinic zirconia be used.

The Applicants assert that it is quite surprising that monoclinic zirconia achieves such strong particles compared to conventional zirconia. A person of ordinary skill in the art would use a relatively reactive species/ingredients for making extrudates and/or would use additional chemicals to actively activate particulate raw materials. For zirconia, one of ordinary skill therefore would start with zirconium hydroxide or an aged version thereof (tetragonal zirconia).

In general, the source for zirconia materials is an ore from which zirconia is refined using acid treatment resulting in the precipitation of zirconium hydroxide. This hydroxide slowly ages and transforms to the oxide (zirconia) that has a tetragonal crystallographic structure. Material obtained in this manner, which ranges from the zirconium hydroxide to the tetragonal zirconia (zirconium dioxide), when used in a process to prepare calcined extrudates, results in soft/weak material. However, as the Applicants herein have found, if one transforms the zirconia hydroxide or tetragonal zirconia into the monoclinic crystallographic orientation, a process to convert this monoclinic zirconia to calcined extrudates surprisingly results in strong particles.

For the reasons discussed above, the Applicants assert that the rejections have been overcome. An early notice of allowance is respectfully requested.

Respectfully submitted,

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